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Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)
P.O. Box 1663, MS K490
Los Alamos, New Mexico 87545
505-667-0666

Date: **AUG 15 2012**
Refer To: ENV-RCRA-12-0137
LAUR: 12-22119

Ms. Claudia Hosch, Chief
NPDES Permits and TMDL Branch (6WQ)
U.S. Environmental Protection Agency (EPA), Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Ms. Hosch:

**SUBJECT: SUPPLEMENTAL REAPPLICATION INFORMATION AND NOTICE OF
PLANNED CHANGE IN SEWAGE SLUDGE DISPOSAL PRACTICE AT THE LOS
ALAMOS NATIONAL LABORATORY SANITARY WASTE WATER SYSTEM
FACILITY - NPDES PERMIT NM0028355**

The purpose of this letter is to provide supplemental information to the reapplication package submitted to EPA on January 27, 2012 and to inform you of a planned change in the Laboratory's sewage sludge disposal practice at the Laboratory. Beginning later this summer the Department of Energy/Los Alamos National Security (DOE/LANS) will begin composting biosolids at the Sanitary Waste Water System Plant.

The material derived from sewage sludge will meet the high quality pollutant concentrations in Table 3 of 40 CFR §503.13, the more stringent Class A pathogen requirements in 40 CFR §503.32(a); and one of the eight vector attraction reduction requirements in 40 CFR §503.33(b)(1) through (b)(8). The final composted soil amendment will be land applied at the TA-60 Sigma Mesa Staging Area. The Staging Area is subject to the conditions of the TA-60 Roads and Ground Facility Multi-Sector General Permit Storm Water Pollution Prevention Plan. Compost material derived from sewage sludge that does not meet the three quality requirements above will not be land applied.

Please contact Michael T. Saladen at (505) 665-6085 of the Water Quality & RCRA Group (ENV-RCRA) if you have questions.

Sincerely,



Anthony R. Grieggs
Group Leader
Water Quality & RCRA Group (ENV-RCRA)
Los Alamos National Security, LLC

ARG:RG/lm

Enclosures:

1. Composting Facility Registration Form
2. Location of Sanitary Waste Water System (SWWS) at TA-46
3. Sanitary Waste Water Facility (additional view)
4. SWWS Facility Site Plan (traffic flow, electric transmission and storm water flows)
5. SWWS Sludge Drying Bed Return Water Flows
6. SWWS Process Schematic
7. NOI to NMED GWQB
8. TA-60 Roads and Grounds Facility MSGP SWPPP Map and Compost Application Site

Cy: Hannah Branning, USEPA/Region 6, Dallas TX, w/enc.

Isaac Chen, USEPA/Region 6, Dallas TX, w/enc.

James Hogan, NMED/SWQB, Santa Fe, NM, w/enc.

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IRM-RMMSO, A150, (E-File)

ENV-RCRA Correspondence File, K490

ENCLOSURE 1

Composting Facility Registration Form

ENV-RCRA-12-0137

LAUR-12-22119

Date: AUG 15 2012

II. Facility Layout

Attach a map of the facility location indicating the land use and zoning of the surrounding area, parcel size, setbacks, and locations of all water courses or wetlands within 200' of the facility.

Attach a Site Map of the Facility Identifying:

- Name and location of facility and North arrow for direction
- Locate any adjacent roads or highways
- Facility boundary and dimensions, fencing, gates, entrances and exits
- All compost storage, loading, and unloading areas
- Traffic flow pattern
- Location of all buildings, structures and utilities – including overhead electrical lines

Enclosure 2: indicates the location of all Technical areas at Los Alamos National Laboratory with respect to the Los Alamos town site, San Ildefonso Pueblo, White Rock town site, Bandelier National Monument, the Santa Fe National Forest, Santa Fe and Los Alamos Counties. The composting operation will be located at the SWWS facility at TA-46. Enclosure 2 includes the main roads and highways. The site is accessed through an adjacent roadway off the Parjarito corridor.

Enclosure 3: view includes the roads into, and within the facility. Public access to the facility is not allowed. TA-46 is a restricted area.

Enclosure 4: includes a detailed view of the SWWS facilities, including the facility entrance (exit same), treatment facilities, compost storage area. The view also contains the location of the ephemeral water course, Canada del Buey.

Enclosure 5: indicates route and direction of sludge drying beds return water system.

Enclosure 6: schematic provides an overview of a treatment process and return water flows.

Enclosure 7: NOI to NMED GWQB.

Enclosure 8: TA-60 Roads and Grounds Facility Multi-Sector SWPPP Map and Composted Soil Amendment Application Site.

III. Operations

Anticipated Start-Up Date (for new facilities): September 1, 2012

Days/Hours of Operation: M-F; 7:30 to 4:30

On-Site Equipment and Storage Containers

Type: <u>Large Dump Truck</u>	Number: <u>1</u>	Size: <u>6-10yd3</u>
Type: <u>Bobcat Loaders</u>	Number: <u>1</u>	Size: <u>1/2</u>
Type: <u>Temperature Probes</u>	Number: <u>3</u>	Size: <u>36"-48"</u>
Type: _____	Number: _____	Size: _____

Compostable Stream:

a. Origin and Market (Indicate company name, country, state, county and/or municipality):

Biosolids are generated on-site and will serve as the principal raw compost material. A number of bulking agent source streams have been identified. These include: 1) wood chips and green materials from Laboratory sites generated from activities of the Laboratory's Road and Grounds organization; 2) wood chips from Los Alamos County; 3) wood chips from local lumber mills (e.g. Conley's Lumber); and 4) shredded paper from the Laboratory's Materials Recycling Facility(MRF).

The final composted soil amendment will be land applied on Laboratory property at the TA-60 Sigma Mesa Staging Area. The Staging Area is subject to the conditions of the TA-60 Roads and Ground Facility Multi-Sector General Permit (MSGP) - #NMR05GB21 - Storm Water Pollution Prevention Plan (SWPPP). An amendment to the SWPPP will include the addition of a 2.5-acre site consisting of shrub oak and dense grass land vegetation. The site is ideally suited for land application for beneficial use of exceptional quality compost (see enclosure # 8). The soil amendment will be applied to a 3" thickness. Located on a mesa top, the topography is generally flat and includes a number of natural swales. Depth to ground water is >1000 ft. The receiving water is Sandia Canyon. In addition to the natural controls, berms will be constructed to ensure soil amendment is not transported to water courses. Coverage of this site under the SWPPP ensures that a documented, implementable process is in place to reduce the possibility that soil amendment will reach a water course. The soil amendment application site will be subject to periodic inspections and corrective actions as specified in the SWPPP.

b. Type/Composition (e.g., manure, food waste, mulch, etc.):

In 2011 the SWWS Facility generated approximately 30 yds³ of Biosolids. Biosolids will serve as the principal raw compost material. Wood chips will serve as the primary bulking agent.

c. Operational Rate (Estimated volume of compostables to be accepted by the facility each day):

In 2011 the SWWS facility generated approximately 30 yds³ of sludge. The Facility will request bulking materials as needed on a monthly basis. At an approximate production rate of 30 yds³ per year, potentially 6-10 yds³ of bulking material will be utilized each month.

- d. Solid Waste Component (Per 20.9.3.29 NMAC), provide plan for disposal of solid wastes that are unavoidably collected):

Only source separated bulking materials will be accepted at the Facility. Solid waste discovered in the source separated bulking materials will be collected daily and placed in receptacles and routed to the local transfer station as is the current practice. Biosolids which are not composted are place in 14ft³ leak proof and covered roll-off bins and landfilled as is the current practiced. Compost not meeting part 503 Class A – high quality will be taken to a landfill permitted to receive special waste.

OPERATIONS PLAN:

Attach an Operations Plan describing procedures for compostables acceptance, storage, processing and removal. The plan shall address the following items:

- Use of signs indicating location of the site, hours of operation, emergency telephone numbers, delivery instructions and to state that fires and scavenging are prohibited
- Means of controlling access to the facility (through use of fencing, gates, locks or other means)
- Use of leak-proof and non-biodegradable storage containers
- Means to control litter and prevent and extinguish fires
- Sufficient unloading areas to meet peak demands
- Means of controlling and mitigating noise and odors
- Conduct of safe and sanitary composting operations
- Frequency of solid waste removal, which shall be by the end of the operating day, unless otherwise approved in the registration
- For composting facilities that accept sewage sludge, provide a plan showing testing methods and procedures for compliance with 40 CFR 503 and 20.6.2 NMAC
- If applicable, demonstrate that a groundwater discharge permit has been applied for. ; go to http://www.nmenv.state.nm.us/gwb/forms/documents/Notice_of_Intent.doc for Notice of Intent, complete and submit to Ground Water Quality Bureau.
- Describe the process, loading rate, proposed capacity, size and operational rate, and the expected disposition rate of the compost from the facility
- Procedures to be taken if unauthorized waste is received
- Procedures in response to emergency situations and equipment break down to ensure that stored materials and compost will be removed in a timely manner to avoid nuisances or hazards
- Record keeping requirements
 - Submit an annual report to the Department within 45 days from the end of each calendar year, per Subsection J of 20.9.3.27 NMAC to include:
 1. the type and weight or volume of recyclable material received during the year;
 2. the type and weight or volume of recyclable material sold or otherwise disposed off site during the year;
 3. final disposition of material sold or otherwise disposed off-site; and
 4. any other information as requested by the Secretary.
- Facility personnel requirements and duties

- Have a certified operator or representative present at all times while the facility is being operated
- Personnel training requirements (safety, operations, etc.)
- Update the registration if there are any significant changes in operation or of ownership
- Any additional information requested by the Secretary

Operations Plan

The SWWS Composting Facility is located at Los Alamos National Laboratory in Technical Area 46 (TA-46). The Facility is isolated from other LANL facilities. Technical Area 46 is a restricted area and public access to the SWWS Facility is controlled. The Facility can be accessed by the public, but only through an approved escort. The Facility is enclosed within a fenced area. The main gate serves as the entrance and exit into the Facility and is equipped with a locking gate. Signs are posted at the entrance to the Facility which provides warnings and instructions.

Sludge from the clarifiers (wasting) is directed to the sand sludge drying beds for dewatering. The sludge beds are equipped with an under drain system which returns water to the head works of the SWWS Plant (See Enclosure 5). Composting will take place on two of the sludge drying beds (see Enclosure 4).

Only source separated bulking materials will be accepted at the Facility. The rate at which bulking materials are to be brought onsite will correspond to the rate at which biosolids are made ready for composting. This is estimated to be 6-10 yds³ per month. Consequently, limited area is needed for bulking material storage (see Enclosure 4). Very little solid waste will be generated from the source separated bulking materials. Any solid waste generated will be collected daily and placed in receptacles and routed to the local transfer station as is the current practice. In conjunction with this registration and pursuant to 20.9.3 and 20.6.2 a notice of intent has been filed with NMED's Ground Water Quality Bureau. A copy of the NOI to the Groundwater Bureau is attached (See Enclosure 7).

In 2011 sludge production at Facility was approximately 30 yds³. At this biosolids production rate, the Facility will request bulking materials as needed and estimates the need for 6-10 yd³ of bulking materials per month. Sludge from the applied bed will be re-located to the composting bed. The Facility will use the static aerated pile composting method. The procedures on formation of a static pile are well documented and SWWS Operators have successfully completed NMED's Compost Certification Course. SWWS biosolids will be mixed with appropriate bulking materials at an anticipated ratio of 40% biosolids to 60% bulking material by volume. This ratio / mix may vary in order to meet the proper C:N ratio based on the composition of bulking material. Once mixed, the material will be piled over a bed of approximately 10 – 12" of wood shavings. The pile height will not exceed 5'. Another 10" of wood chips will be placed above the mix to provide added levels of odor and vector controls. Compost operations conducted over the drying beds will provide a closed

system for liquids and further facilitate a safe and sanitary operation. The SWWS's Operation and Maintenance Manual includes a number of procedures on how odors are controlled for the Facility.

To record pathogen and vector attraction reduction, temperatures and moisture content will be monitored and logged twice per day. Once the 15 day active stage is completed, the compost will be cured for 30-45 days. Once the product is cured (pile ambient temperatures reached), and before land application, sampling and analysis pursuant to Part 503 (and specified below) will be conducted. An estimated 150 yds³ of composted soil amendment will be generated annually.

The final composted soil amendment will be land applied at the TA-60 Sigma Mesa Staging Area. The Staging Area is subject to the conditions of the TA-60 Roads and Ground Facility NPDES Multi-Sector General Permit (MSGP) - Storm Water Pollution Prevention Plan (SWPPP).

Compliance with 40 CFR 503 will be achieved as follows:

The SWWS Facility will use the Static Aerated Pile composting method to produce an "exceptional quality" (EQ) biosolid or Composted Soil Amendment. Only EQ biosolids will be land applied at LANL. EQ biosolids meet the Part 503 pollutant concentration limits (Table 3 of Section 503.13) as well as Class A pathogen reduction requirements and one of the first eight vector attraction reduction options listed in 503.33(b)(1) through (b)(8). At anticipated rates of production, the monitoring frequency for metals and fecal coliform will be no more than once per quarter. Specified monitoring rates are established in Table 1 of §503.16. Monitoring will take place prior to land application. Monitoring for fecal coliform bacteria will be conducted close to the time of final use.

Table 1 of §503.16—Frequency of Monitoring—Land Application

Amount of sewage sludge ¹ (metric tons per 365 day period)	Frequency
Greater than zero but less than 290	Once per year.
Equal to or greater than 290 but less than 1,500	Once per quarter (four times per year).

¹Either the amount of bulk sewage sludge applied to the land or the amount of sewage sludge prepared for sale or give-away in a bag or other container for application to the land (dry weight basis).

Monitoring Considerations for Class A - High Quality Compost

Parameter	Frequency ¹	Sample Type and Amount	When	Sample Location	Methods
Metals ²	Annually or Quarterly	Composite ³ (7 grab samples)	Before ⁴ Use or Land Application	On-Site at varying depths and locations within pile	SW-846
Fecal Coliform	Annually or Quarterly	7 individual grab samples over a 14 day period ³	Before ⁴ Use or Land Application	On-site at varying depths and locations within pile	SM-9221 E (MPN) SM-9222 D (membrane filter)

1. §503.16—Frequency of Monitoring—Land Application
2. §503.13 – Table 1 and Table 3
3. No fixed number – Guidance
4. Close to the time of use or disposal

To ensure Class A Pathogen Reduction in the aerated static pile composting processes, temperatures will be taken at multiple points at a range of depths throughout the composting medium. Pathogen reduction will take place at the same time as vector attraction reduction. The temperature of the sewage sludge must be maintained at 55°C or higher for three (3) consecutive days. The following information will be recorded and documented: description of the composting method, the date and times temperatures maintained above 55°C and 2 temperature readings at least 7 hours apart.

Description of Compost Method	Date / Time	Temperature °C	Temperature °C	Sampler
		Time #1	Time #2	

Vector Attraction Reduction Option 5 will be used. This option requires aerobic treatment (e.g. composting) of the sewage sludge for at least 14 consecutive days at over 40°C (104°F) with an average temperature of over 45°C (113°F). The following information will be recorded and documented: description of the composting method, the date and times temperatures maintained above 40°C - 45°C, documenting average temperatures and 2 temperature readings at least 7 hours apart.

Description of Treatment Process	Date / Time	Temperature °C	Temperature °C	Sampler
		Time #1	Time #2	

The SWWS Facility maintains an emergency protocol for each of its major processes. The protocol is outlined in the *Wastewater Treatment Facility Operation Manual*. By procedure, a logical sequence of steps are to be followed by the operator on duty in responding to emergencies: identifying the emergency, investigating its extent, deciding on proper initial course of action, taking corrective action to rectify the situation, and following up with a post-emergency investigation.

To prepare for the annual report required by 20.9.3.27, the following information will be maintained and recorded:

- Amount of source separated bulking material brought on-site
- Amount of biosolids generated and used in the composting process
- Final disposition of compost material

The report will be submitted to NMED Solid Waste Bureau within 45 days of the end of the calendar year.

The SWWS Facility currently has 3 operators certified per 20.9.7. A certified operator will be on-site during hours of composting operations. SWWS operators are subject to an extensive training plan that requires instruction in operations and safety and, in part, includes the following course work, hands on training and certifications:

- Maintenance Worker
- Fork lift operator

- Incidental crane operator
- Sanitary Waste Water System
- Chemical Hazard Communication
- Corrosives Hazard Training
- Electric Safety Basics
- Excavation Fill Soil Disturbance
- Fork Lift Operator
- Incidental Crane Operator
- NM State Waste Water Certification
- NM State Compost Certification
- Radiological Worker II Training
- Lockout/Tagout Authorized Worker
- Air Monitoring for Confined Spaces
- Fall Protection
- First Aid

20.9.3.28 ADDITIONAL REGISTRATION REQUIREMENTS FOR COMPOSTING FACILITIES THAT ACCEPT GREATER THAN 25 TONS PER DAY COMPOSTABLE MATERIAL OR GREATER THAN 5 TONS PER DAY OF MATERIAL THAT WOULD OTHERWISE BECOME SPECIAL WASTE.

Not Applicable

IV. ACKNOWLEDGEMENTS

- A. I AM AWARE THAT THE OWNER OR OPERATOR IS REQUIRED TO COMPLY WITH ALL OF THE TERMS OF THE APPROVED REGISTRATION _____ INITIALS
- B. I AM AWARE THAT THE OWNER OR OPERATOR MUST UPDATE THIS REGISTRATION TO REFLECT ANY MATERIAL CHANGES IN OPERATIONS (PRIOR TO IMPLEMENTING SUCH CHANGES)
_____ INITIALS

The undersigned attests the information provided is true and accurate.

Signature and Title

Date

Telephone

ENCLOSURE 2

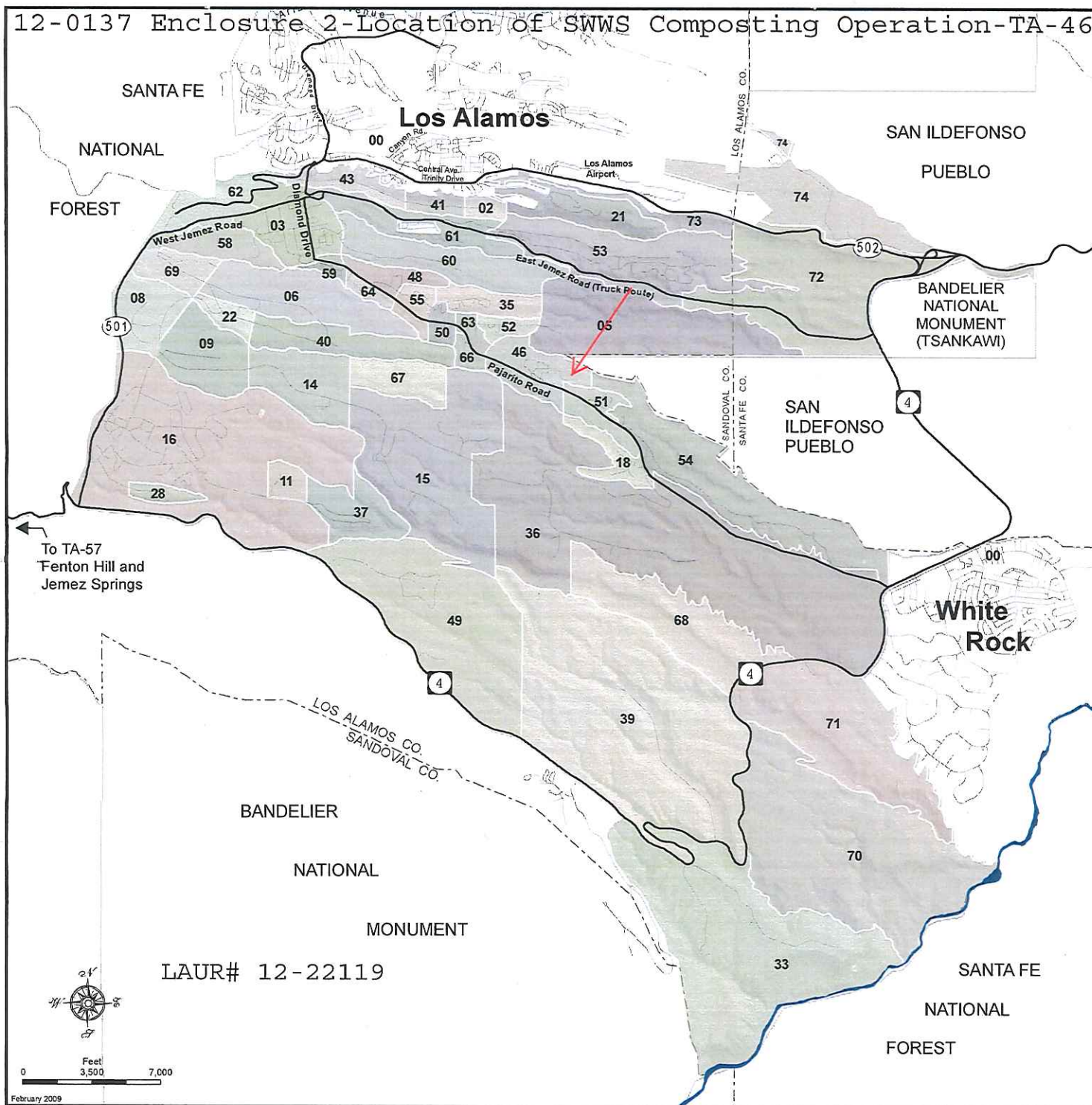
Location of Sanitary Waste Water Systems (SWWS) at TA-46

ENV-RCRA-12-0137

LAUR-12-22119

Date: AUG 15 2012

12-0137 Enclosure 2-Location of SWWS Composting Operation-TA-46



Technical Areas

- TA-00 OFF SITE
- TA-02 OMEGA SITE
- TA-03 SOUTH MESA SITE
- TA-05 BETA SITE
- TA-06 TWO MILE MESA SOUTH SITE
- TA-08 ANCHOR WEST SITE
- TA-09 ANCHOR EAST SITE
- TA-11 K SITE
- TA-14 Q SITE
- TA-15 R SITE
- TA-16 S SITE
- TA-18 PAJARITO LABORATORY
- TA-21 DP SITE
- TA-22 TD SITE
- TA-28 MAGAZINE AREA A
- TA-33 HP SITE
- TA-35 TEN SITE
- TA-36 KAPPA SITE
- TA-37 MAGAZINE AREA C
- TA-39 ANCHO CANYON SITE
- TA-40 DF SITE
- TA-41 W SITE
- TA-43 HEALTH RESEARCH LABORATORY
- TA-46 WA SITE
- TA-48 RADIOCHEMISTRY SITE
- TA-49 FRIJOLAS MESA SITE
- TA-50 WASTE MANAGEMENT SITE
- TA-51 ENVIRONMENTAL RESEARCH SITE
- TA-52 REACTOR DEVELOPMENT SITE
- TA-53 LOS ALAMOS NEUTRON SCIENCE CENTER
- TA-54 WASTE DISPOSAL SITE
- TA-55 PLUTONIUM FACILITY SITE
- TA-57 FENTON HILL
- TA-58 TWO MILE MESA NORTH SITE
- TA-59 OH SITE
- TA-60 SIGMA MESA SITE
- TA-61 EAST JEMEZ SITE
- TA-62 NORTHWEST SITE
- TA-63 PAJARITO SERVICE SITE
- TA-64 CENTRAL GUARD SITE
- TA-66 CENTRAL TECHNICAL SUPPORT SITE
- TA-67 PAJARITO MESA SITE
- TA-68 WATER CANYON SITE
- TA-69 ANCHOR NORTH SITE
- TA-70 RIO GRANDE SITE
- TA-71 SOUTHEAST SITE
- TA-72 EAST ENTRY SITE
- TA-73 AIRPORT SITE
- TA-74 OTOWI SITE

ENCLOSURE 3

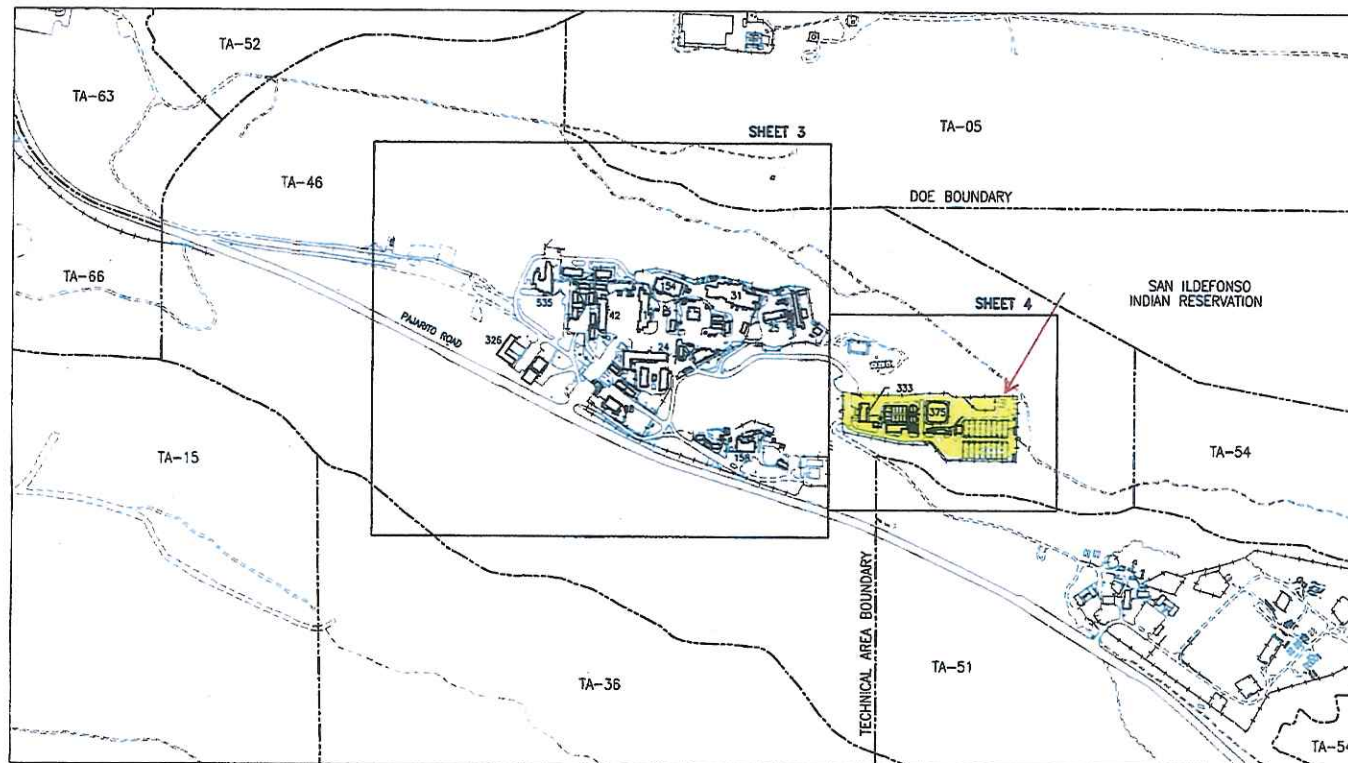
Sanitary Waste Water Facility (additional view)

ENV-RCRA-12-0137

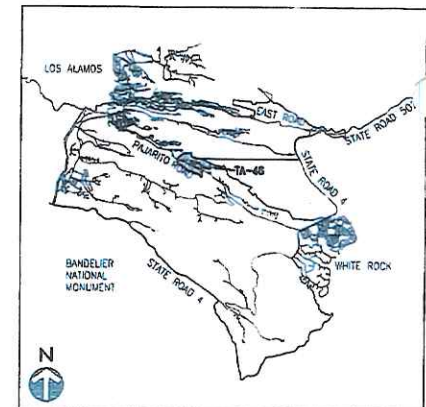
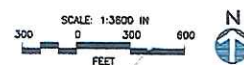
LAUR-12-22119

Date: **AUG 15 2012**

STRUCTURE LOCATION MAPS



TA-46 KEY MAP



LOCATION MAP

SCALE: NONE

9	05-04-02	REMOVED TO ADD LOGO	APP	SEC	PROG	LOG
8	07-14-02	REMOVED TO SERIES OF 07-14-02	APP	SEC	PROG	LOG
7	05-05-01	REMOVED TO SERIES OF 05-05-01	APP	SEC	PROG	LOG
6	05-07-02	REMOVED TO SERIES OF 05-07-02	APP	SEC	PROG	LOG
5	05-07-02	REMOVED TO SERIES OF 05-07-02	APP	SEC	PROG	LOG
4	05-07-02	REMOVED TO SERIES OF 05-07-02	APP	SEC	PROG	LOG
3	05-07-02	REMOVED TO SERIES OF 05-07-02	APP	SEC	PROG	LOG
2	05-07-02	REMOVED TO SERIES OF 05-07-02	APP	SEC	PROG	LOG
1	05-07-02	REMOVED TO SERIES OF 05-07-02	APP	SEC	PROG	LOG

		UTILITIES AND INFRASTRUCTURE	
AS-BUILT STRUCTURE LOCATION MAPS			
TA-46		WA-SITE	
DRAWN J. MOSE	DESIGN J. MOSE	CHECKED H. SALAZAR	DATE 08-23-03
SUBMITTED WILFRED SALAZAR		APPROVED FOR RELEASE BY LARRY BAYS	
		SHEET 1	
Los Alamos National Laboratory PO Box 1663 Los Alamos, New Mexico 87545		1 OF 4	
CLASSIFICATION U	PROJECT ID 11952	REVIEWER K. SALAZAR	DATE 08-23-03
KSL NO. 91-020	11952	AB34	9

ENCLOSURE 4

SWWS Facility Site Plan (traffic flow, electric transmission and storm
water flows)

ENV-RCRA-12-0137

LAUR-12-22119

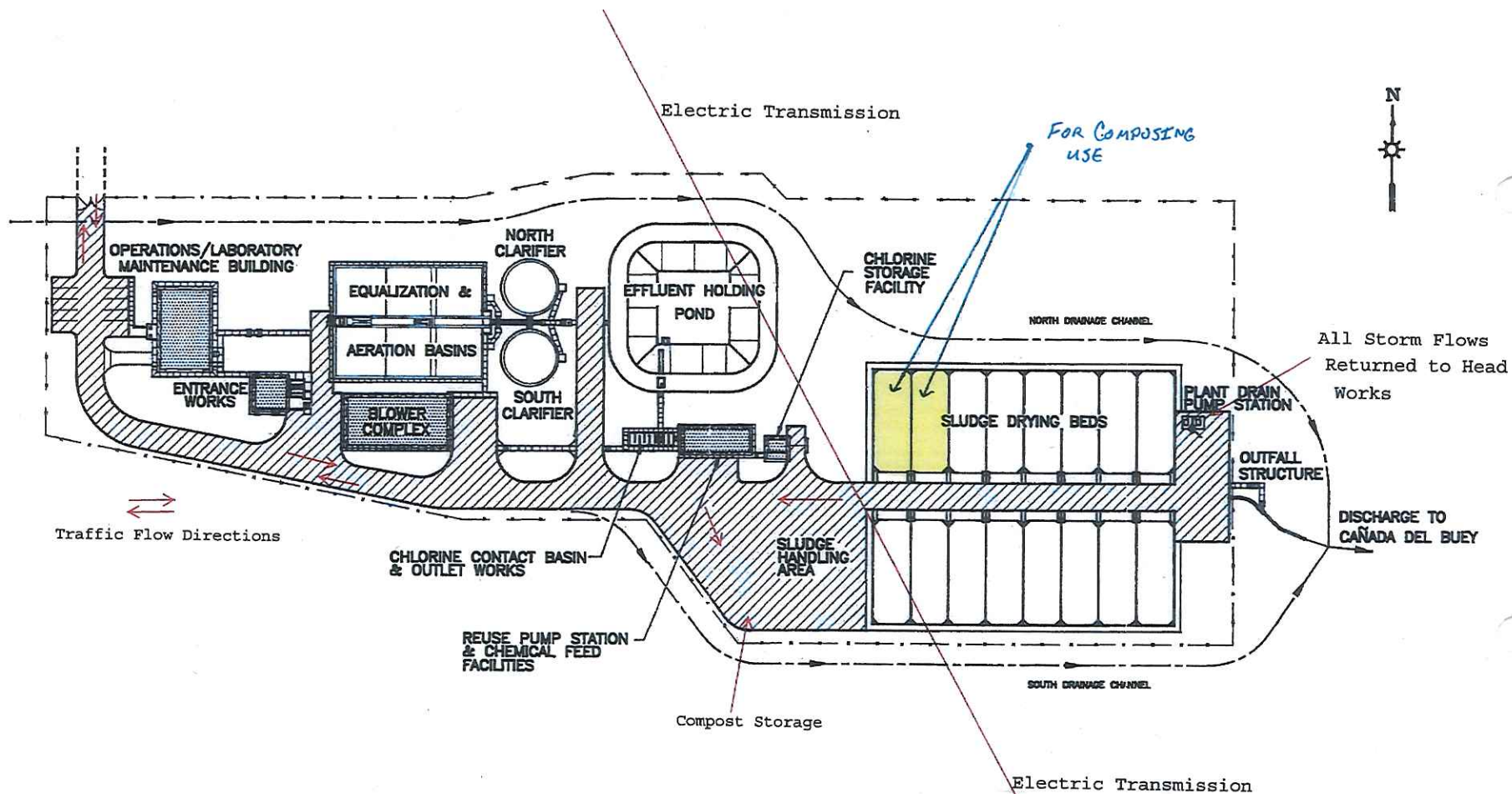
AUG 15 2012

Date: _____

12-0137

Enclosure 4 Sanitary Waste Water System (SWWS) at TA 46

LAUR-12-22119

FIGURE 1.3-1
FACILITY SITE PLAN

ENCLOSURE 5

SWWS Sludge Drying Bed Return Water Flows

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